

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the applications. In this listing, claims 1-13 and 28-39 have been cancelled.

Listing of Claims:

1-13. (Cancelled)

14. A method for making a derivative of hyaluronic acid, comprising the steps of:

a) forming an activated ester at a carboxylate of a glucuronic acid moiety of hyaluronic acid; and

b) substituting at the carbonyl carbon of the activated ester formed in step (a), a side chain comprising a nucleophilic portion and a functional group portion.

15. The method of claim 14, wherein the nucleophilic portion is selected from the group consisting of ammonia, primary amine, secondary amine, hydroxyl, and sulfhydryl.

16. The method of claim 14, wherein the functional group portion is selected from the group consisting of active ester, aldehyde, amine, arylazide, hydrazide, maleimide, sulfhydryl, and peptide.

17. The method of claim 14, wherein step (a) is performed with an active ester selected from the group consisting of a substituted triazole, N-sulfosuccinimide,

nitrophenol, partially halogenated phenol, perhalophenol, pentafluorophenol, HOBT, and NHS, by carbodiimide-mediated coupling.

18. The method of claim 14, comprising the additional step of: (c) forming a cross-linked hydrogel from the hyaluronic acid derivative.

19. A method for forming a matrix for a temporary scaffold for tissue repair according to the method of claim 18, wherein the crosslinker is selected from the group consisting of polyvalent active ester, aldehyde, amine, arylazide, maleimide, and sulfhydryl.

20. A method for forming a matrix for a temporary scaffold for tissue repair according to the method of claim 18, wherein the HA derivative comprises a peptide substrate for transglutaminase, and wherein the HA derivative is crosslinked using transglutaminase.

21. The method of claim 18, wherein step (c) is performed in the presence of cells.

22. The method of claim 18, wherein step (c) is performed in the presence of at least one member selected from the group consisting of growth factors, cytokines, drugs, and bioactive peptides.

23. The method of claim 22, wherein the bioactive peptide is RGD.

24. The method of claim 22, wherein the bioactive peptide is a substrate for transglutaminase.

25. The method of claim 24, wherein the bioactive peptide is APQQEA.

26. The method of claim 24, wherein the growth factor is TGF- $\beta$  or BMP.

27. The method of claim 18, wherein step (c) is performed *in situ* in a patient in need of tissue repair.

28-39. (Cancelled)